chromogens in 67. Their existence in three of the other four species can be demonstrated by other methods. He mentions various fungi that other investigators have shown to contain chromogens, as well as various other higher forms. The points in the literature of this very important subject are briefly and clearly stated.

The same investigator finds[15] that portions of leaves in a 20 to 25 per cent. saccharose solution for seven days show a great increase in respiratory chromogens, over checks immediately taken from the plant, or those kept in distilled water for the same length of time. Illumination during the treatment increases somewhat the chromogen production. If this treatment is continued for 17 days in light, the portions of leaves take on a bright-red color. The color he believes originates from the oxidation of respiratory chromogens. He holds that the sugar greatly increases the respiration and therefore the respiratory chromogens. Whether the chromogen shall become chromatic depends upon whether the oxidases exceed the reductases in activity. In long-continued exposures this seems to occur, hence the red color. He believes that OVERTON'S explanation of spring and autumn coloration of leaves is not complete with the consideration of low temperature (as lowering respiration) and abundant supply of sugar as the factors, and considers the relative activity of oxidases and reductases on the chromogen products of respiration as very important.—WILLIAM CROCKER.

Graft hybrids.—WINKLER[16] has begun a series of experiments in the endeavor to produce graft hybrids, such as the well-known *Cytisus Adami* is believed to be. He uses for this purpose certain members of the Solanaceae and Capparidaceae. The method is to graft one species on another in the ordinary manner, and after the scion has "taken," to sever the stem at a point where the tissues of both species will be cut. Adventive shoots then grow out from this cut surface. These will have the characters of either species according to the point they grow from. Shoots arising from the point of contact of the two species gave a peculiar result, which may be described. A scion of *Solanum nigrum* was grafted in this way on a seedling of *S. lycopersicum*, and the shoot in question, originating from the point of contact of the parental tissues, bore leaves having on one side of the stem the characters of *S. nigrum*, and on the other side those of *S. lycopersicum*. In certain cases where leaves were situated on the meeting-line of two kinds of cells, one-half of a leaf showed the characters of either parent. WINKLER proposes to call such organisms, in which one side resembles either parent, "chimeras," and for this plant proposes the name *Chimera Solanum nigrolycopersicum*. He concludes that the cells of two different species may come together in other than a sexual way, and thus serve as the starting-point for an organism which shows simultaneously the characters of both parent species.—R. R. GATES.

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[15] PALLADIN, W., Ueber die Bildung der Atmungschromogene in den Pflanzen. Ber. Deutsch. Bot. Gesells. **26a**: 389–394. 1908.

[16] WINKLER, HANS, Ueber Propfbastarde und pflanzliche Chimären. Ber. Deutsch. Bot. Gesells. **25**: 568–576. *figs.* 3. 1907.